William A. Drohan
15 Glenridge Drive
Bedford MA 01730

Home Tel: 781-275-6247
Office Tel: 617-253-9834 (Tues,Wed,Thurs)
781-275-6247 (Mon, Fri)
Cell: 617-974-1505
Email: bill.drohan@gmail.com
billd@mit.edu

EXPERIENCE:

Aug. 2004 – Oct. 2011

Visiting Scientist at MIT, Research Engineer at VA Boston Healthcare System and consultant to Massachusetts Ear and Eye Infirmary (MEEI). Developing software, hardware and modeling theory to support the development of retinal implants to aid in restoration of vision to blind patients.

Developed Labview programs for driving and reading data from latest BRIP ASIC for retinal Implants.

Developed modeling software to simulate electrical firing thresholds of neurons from prosthetic electrodes. Work is based on adaptation of Hodgkin/Huxley neuron cell kinetics. Correlated model work with experimental patch clamp data from rabbit retinas obtained by other scientists.

Two patent applications in this area are in process of being filed.

Developed extensive Labview programs for driving experimental implant chip.

Designed strategies for experimental surgeries in animals to further the design of the retinal implant, in conjunction with surgeons and neurologists from MEEI.

Posters presented at Association for Research in Vision and Opthalmology (ARVO) annual meeting in 2007, 2008 and 2010 on retinal ganglion cell models.

Oct. 1999 – Aug. 2004 New England Design Associates
Bedford MA

President of my own consulting business.
Developed Medical data base program for Palm Pilots, for sale to Doctors.

Developed a PC based management program for teachers.
Developed highly scalable object oriented database as a .NET web forms application.
Developed algorithms for filtering circular data sets using Zernicke Polynomials and FFTs.

Mar. 1993 – Oct. 1999 ADE Corporation
Westwood MA

Started as Principal Engineer and promoted to Director of Engineering in June 1993.

As Director, headed up New Product Development, Sustaining Engineering, Special Products and Engineering Services, with four managers and about 60 department members. Solved some root cause flaws in product line that enabled sharp increase in production to meet record sales levels. Also initiated a major software redesign for our major product line.

From Sept. 1997 to about Jan 1999, I was responsible for the creation of a real time software controller for a major new product offering from our optical division in Charlotte NC. This product is now shipping.

During 1999 directed several different software projects which promoted the use of software componentization using modern object oriented design.

Aug. 1986 - Mar. 1993 (60 hrs/week) New England Design Associates
Bedford MA

President of my own consulting business in the general field of hardware and software embedded system designs for industrial and military clients. Some significant achievements were: Robotic system designs for the semiconductor industry, weapons simulators for the US Navy, specialized banking software products, medical instrument design, and general purpose embedded computer designs.

Oct. 1984 - Aug. 1986 (40-50 hrs/week) G&S Systems
Bedford MA

VP of Engineering of this $8M military Electronics Company. Led a department of about 30 people in the design and development of massively parallel 68K processor based simulator systems for the US Naval Underwater Systems Command.

1978 – 1984 (60 hrs/week) NuVec Laboratories, Inc.

Bedford MA

President of this venture start-up firm. Received limited first round financing to develop a distributed parallel microprocessor based system running a Unix equivalent operating system designed as a distributed embedded system. Developed two prototype 17 user systems that were exhibited at various electronic trade shows.

prior to 1978 (40-50 hrs/week) Charles Stark Draper Laboratory

Cambridge MA

Staff member and Associate Director at this MIT-associated military electronics systems laboratory. Worked on many systems of high complexity for the Air Force and the Navy. Served as instructor in the MIT Industrial Liaison Program, and generally performed in many technical development and leadership roles.

EDUCATION:

BEE - Manhattan College, NYC
MEE - Rensselaer Polytechnic Institute, Troy NY
Several graduate courses at MIT on semiconductor design
Several graduate courses at Harvard University Extension School in 95-96 on Biophysics
Commercial Pilots License

HONORS:

Award from Society of American Military Engineers for Superior Performance in Field Operations.

Personal Letters of Commendation from Secretary of the Air Force, Air Force Chief of Staff and others, after successful software effort that rescued "errant" satellite.

Member of Eta Kappa Nu and Sigma Xi honorary societies

Holder of two patents on air and space navigation techniques, one patent on instrument calibration techniques and one patent on real time software systems. Two patents in process on prosthetic neuron stimulation techniques.